DOCUMENT RESUME

ED 318 870 CE 054 650

TITLE	The 1990 Agenda for the National Center for Research in Vocational Education.
INSTITUTION	National Center for Research in Vocational Education, Berkeley, CA.
SPONS AGENCY	Office of Vocational and Adult Education (ED), Washington, DC.
PUB DATE	Mar 90
GRANT	V051A80004-90
NOTE	43p.
AVAILABLE FROM	National Center for Research in Vocational Education Materials Distribution Service, 46 Horrabin Hall, Western Illinois University, Macomb, IL 61455 (Order No. MDS-030, free).
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Evaluation; *Government School Relationship; *Leadership Training; *Management Development; *Research and Development; Research and Development Centers; Special Needs Students; *Teaching Methods; *Vocational Directors; Vocational Education
IDENTIFIERS	Job Training Partnership Act 1982; *National Center for Research Vocational Education

ABSTRACT

This document describes the work planned by the National Center for Research in Vocational Education (NCRVE), University of California, Berkeley, for 1990. Part I provides research project descriptions in six issue areas as follows: (1) context, goals, planning, and evaluation; (2) curriculum and instructional methods; (3) vocational education for special populations; (4) the development of personnel in vocational education; (5) the delivery system of vocational education and training; and (6) governance and policy. Part II describes the eight service functions of the NCRVE as follows: (1) centerwide 50-state survey; (2) advanced study center for leadership development; (3) leadership development in vocational education--preparing vocational education administrators; (4) inservice education; (5) technical assistance for special populations program; (6) dissemination; (7) technical assistance for planning and evaluation; and (8) relationships between vocational education and the Job Training Partnership Act. An index and a listing of NCRVE subcontractors is included. (CML)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED318870

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

P Goodman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

THE 1990 AGENDA
FOR THE
NATIONAL CENTER FOR RESEARCH
IN VOCATIONAL EDUCATION

The University of California at Berkeley
Subcontractors:
The University of Illinois
The University of Minnesota
The RAND Corporation
Teachers College, Columbia University
Virginia Polytechnic Institute and State University

Revised March 1990

Supported by
The Office of Vocational and Adult Education
U.S. Department of Education

MDS-030

CE054652

BEST COPY AVAILABLE

FUNDING INFORMATION

Project Title:	National Center for Research in Vocational Education
Grant Number:	V051A80004-90
Act under which Funds Administered:	Carl D. Perkins Vocational Education Act P. L. 98-524
Source of Grant:	Office of Vocational and Adult Education U.S. Department of Education Washington, D.C. 20202
Grantee:	The Regents of the University of California National Center for Research in Vocational Education 1995 University Avenue, Suite 375 Berkeley, CA 94704
Director:	Charles S. Benson
Disclaimer:	This publication was prepared pursuant to a grant with the Office of Vocational and Adult Education, U.S. Department of Education. Grantees undertaking such projects under government sponsorship are encouraged to express freely their judgement in professional and technical matters. Points of view of opinions do not, therefore, necessarily represent official U.S. Department of Education position or policy.
Discrimination:	Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Title IX of the Education Amendments of 1972 states: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance." Therefore, the National Center for Research in Vocational Education project, like every program or activity receiving financial assistance from the U.S. Department of Education, must be operated in compliance with these laws.

This publication is available from the:

National Center for Research in Vocational Education
Materials Distribution Service
Western Illinois University
46 Horrabin Hall
Macomb, IL 61455

800-637-7652 (Toll Free)

Table of Contents

THE CENTER'S MISSION 1

PART ONE: RESEARCH PROJECT DESCRIPTIONS 3

I. CONTEXT, GOALS, PLANNING, AND EVALUATION 4

THE RESPONSE OF THE VOCATIONAL EDUCATION SYSTEM TO TECHNOLOGICAL AND ECONOMIC CHANGES IN THE WORKPLACE 4

EDUCATIONAL REQUIREMENTS OF LEARNING-INTENSIVE PRODUCTION STRATEGIES 5

LINKING PLANNING AND EVALUATION IN VOCATIONAL AND TECHNICAL EDUCATION 6

IMPROVING HEALTH SCIENCES EDUCATION: AN INDUSTRY STUDY 6

II. CURRICULUM AND INSTRUCTIONAL METHODS 7

SUBJECT MATTER OF VOCATIONAL EDUCATION 7

MODELS FOR INTEGRATING ACADEMIC AND VOCATIONAL EDUCATION 8

IMPACT OF COGNITIVE SCIENCE–BASED INSTRUCTIONAL DESIGN ON WORK-RELATED, DOMAIN-SPECIFIED KNOWLEDGE ACQUISITION, STRUCTURE, USE, AND TRANSFER 8

COMPUTERIZED ADAPTIVE ASSESSMENT OF BASIC SKILLS 9

RESEARCH ON THE EFFECTS OF TRAINING IN CONFLICT RESOLUTION AND COOPERATION 10

TECHNICAL AND SYMBOLIC KNOWLEDGE IN CNC MACHINING LABORATORY FOR COGNITIVE STUDIES OF WORK 10

ANALYSIS AND IMPROVEMENT OF INSTRUCTIONAL MATERIALS 11

APPLIED BASICS CURRICULA IN VOCATIONAL EDUCATION: VALIDATION OF STUDENT AND PROGRAM OUTCOMES 12

COMPUTER ASSISTED INSTRUCTIONAL DESIGN FOR COMPUTER-BASED INSTRUCTION 12

COMPUTER-BASED LEARNING ENVIRONMENTS IN VOCATIONAL EDUCATION SETTINGS: A PRELIMINARY ANALYSIS OF THE FIT OF NEW TOOLS WITH NONTRADITIONAL POPULATIONS AND DOMAINS 13

III. VOCATIONAL EDUCATION FOR SPECIAL POPULATIONS 14

VOCATIONAL EDUCATION IN THE CONTEXT OF PROGRAMS FOR PREGNANT AND PARENTING TEENAGERS 14

PREPARING A LITERATE WORKFORCE 14

ASSESSING AND IMPROVING THE EFFECTS OF PRACTICES FOR SERVING LEP AND IMMIGRANT STUDENTS IN VOCATIONAL EDUCATION 15

STUDY ON SKILLS ACQUISITION BY ECONOMICALLY DISADVANTAGED YOUTH 16

IV. THE DEVELOPMENT OF PERSONNEL IN VOCATIONAL EDUCATION 17

THE NATURE OF RESEARCH-SENSITIVE PRACTICE IN VOCATIONAL EDUCATION 17

THE NATURE OF EFFECTIVE VOCATIONAL EDUCATORS IN BUSINESS AND INDUSTRY 18

PROFESSIONAL DEVELOPMENT OF BEGINNING VOCATIONAL TEACHERS 19

IDENTIFYING PROFESSIONAL DEVELOPMENT PROGRAMS FOR TWO-YEAR COLLEGE OCCUPATIONAL-TECHNICAL FACULTY 19

THE PROFESSIONAL COMMUNITY OF TEACHERS AND RELATIONS BETWEEN VOCATIONAL AND ACADEMIC FACULTY 20

HIGHER EDUCATION COURSEWORK AS PREPARATION FOR TEACHING ACADEMIC SKILLS IN VOCATIONAL EDUCATION CLASSES 21

SCHOOL CONTEXT AND TEACHERS' PROFESSIONAL DEVELOPMENT IN VOCATIONAL EDUCATION 22

V. THE DELIVERY SYSTEM OF VOCATIONAL EDUCATION AND TRAINING 22

LEARNING FROM SCHOOL-BASED WORK EXPERIENCE PROGRAMS 22

MAGNET VOCATIONAL SCHOOLS: ARE THEY SUCCESSFUL, AND FOR WHOM? 23

INSTITUTIONAL EXCELLENCE IN VOCATIONAL EDUCATION: RECOGNIZING AND ASSESSING ITS NATURE AND OPERATION 24

THE EFFECTS OF CUSTOMIZED TRAINING AND LOCAL ECONOMIC DEVELOPMENT: COMMUNITY COLLEGES 24

THE EFFECTS OF CUSTOMIZED TRAINING AND LOCAL ECONOMIC DEVELOPMENT ON FIRMS, EDUCATION PROVIDERS, AND GOVERNMENT 25

MIXING ACADEMIC WITH VOCATIONAL: DO THE MAGNETS DO IT BETTER? 25

VI. GOVERNANCE AND POLICY 26

A LONGITUDINAL ASSESSMENT OF VOCATIONAL EDUCATION ENROLLMENT PATTERNS AND THE IMPACT OF EDUCATIONAL REFORM 26

POLICY FOR INTEGRATED ACADEMIC AND VOCATIONAL EDUCATION 27

ACCOUNTABILITY IN VOCATIONAL EDUCATION 27

EFFICIENCY AND EQUITY EFFECTS OF VOCATIONALLY FOCUSED POSTSECONDARY EDUCATION AND TRAINING 28

PART TWO: THE SERVICE FUNCTIONS OF THE NATIONAL CENTER 29

CENTER-WIDE 50-STATE SURVEY 30

ADVANCED STUDY CENTER FOR LEADERSHIP DEVELOPMENT 30

LEADERSHIP DEVELOPMENT IN VOCATIONAL EDUCATION: PREPARING VOCATIONAL EDUCATION ADMINISTRATORS 31

INSERVICE EDUCATION 32

TECHNICAL ASSISTANCE FOR SPECIAL POPULATIONS PROGRAM 32

DISSEMINATION 33

TECHNICAL ASSISTANCE FOR PLANNING AND EVALUATION 34

RELATIONSHIPS BETWEEN VOCATIONAL EDUCATION AND THE JOB TRAINING PARTNERSHIP ACT 35

INDEX 37

THE CENTER'S MISSION

Simply put, the Center's mission is to invigorate vocational education so it can give citizens, of all ages, the skills they need for successful, long-term employment. The Center contributes to redefining the goals of education through developing and disseminating an understanding of the importance of a vital workforce to the nation's future. We seek to enable vocational education to shape (rather than react to) debates over the role of all of education. The Center endeavors to assure that vocational programs are responsive to rapid changes in the economy as well as in educational needs. We investigate ways to resolve the educational issues surrounding the growing "at-risk" population. We believe that the clients—all students and all educators, employers, policymakers, and researchers—are better served by a vision which integrates theory and practice, the "academic" and the "vocational." The goal is to make this new vision of work-related education a reality.

PART ONE:

RESEARCH PROJECT DESCRIPTIONS

The Center's research agenda is divided into six issue areas, each of them consistent with the original research agenda of the Center. The six issue areas are as follows:

I. Context, Goals, Planning, and Evaluation

The goals of education—vocational and academic—must be defined more clearly through an examination of the changing conditions of employment, to understand better how the goals of vocational education and the skills taught within it should be changing and to contribute to refining the methodologies of evaluation and planning, so that information about the effectiveness of programs can be developed and then used to improve existing programs.

II. Curriculum and Instructional Methods

Once the goals of vocational programs have been established, then curriculum and instructional methods must be devised to translate those goals into practice. The research in this area will generate new ideas about the processes of imparting knowledge, attitudes, and skills to young people and adults.

III. Vocational Education for Special Populations

Changing demographic conditions are resulting in a growing portion of those needing vocational education also needing special assistance to benefit from it. Activities in this issue area not only focus on improving existing programs for these special populations, but also on the more fundamental issues of how different groups are socialized for work and how they vary in their approaches to learning and schooling.

IV. The Development of Personnel in Vocational Education

Responsiveness to changing conditions is impossible without reforming the preparation of educational professionals. This issue is especially important in vocational education since the preparation of vocational teachers and administrators is so varied and policies have been so inconsistent.

V. The Delivery System of Vocational Education and Training

Vocational education and training have expanded into many institutions other than the high schools in which these programs originated. The projects in this issue area examine a variety of occupational preparation methods, concentrating on their relationships with public secondary and postsecondary institutions as well as on the relative effectiveness of vocational preparation in different institutions.

VI. Governance and Policy

The status and effectiveness of the current "system" of federal, state, and local policymaking in secondary and postsecondary vocational education is investigated within this research focus.

I. CONTEXT, GOALS, PLANNING, AND EVALUATION

Project I.1

THE RESPONSE OF THE VOCATIONAL EDUCATION SYSTEM TO TECHNOLOGICAL AND ECONOMIC CHANGES IN THE WORKPLACE

Project Director: Thomas Bailey, Teachers College, Columbia University (Year 3 of 5)

Keywords: Educational Trends, Economic Climate, Data Analysis

The third and final year of this project is designed first to analyze the perceptions of educators and trainers, both in firms and in the secondary and postsecondary vocational education systems, about the changes taking place in the economy, how they understand the implications of those changes for their roles, and, finally, how they have in fact responded. Thus, an overall picture will be developed of current trends in the vocational system and of how closely this picture corresponds to the changing nature of work.

This project will be useful for vocational educators at both the secondary and postsecondary levels in developing a strategy to respond to changes in the labor market for their graduates. This research will enable the development of insights into the conditions under which reforms are more successful and where particular efforts need to be made to bring about change.

The study will focus on recent responses of the vocational education system to economic changes in the major metropolitan areas—New York, Philadelphia, Chicago, and Los Angeles. These cities were chosen both because there is variation in their recent paths of economic development and because of their large and contrasting minority populations. This allows us to take into account the profoundly important influence of race on the path of educational reform.

The study will analyze the economic trajectory of the four cities. The bulk of the information for an analysis of educational trends will be gathered in interviews in forty schools and with representatives of forty employers. Interviews with representatives of unions, economic development officials, and board of education administrators will also be conducted.

The final report will describe the results from each of the four cities and the implications for vocational educational policy and reform.

Project I.3

EDUCATIONAL REQUIREMENTS OF LEARNING-INTENSIVE PRODUCTION STRATEGIES

Project Directors: David Stern, Clair Brown, and Michael Reich
University of California at Berkeley (Year 2 of 2)

Keywords: Industrial Training, Personnel Needs, Educational Needs

Large numbers of U.S. firms are trying to reduce the time they need to respond to new technologies or changing market conditions. Rapid adaptation continually confronts employees with new problems. Work therefore becomes more "learning-intensive." In some firms, managers have deliberately created new organizational structures (e.g., semi-autonomous work teams, pay for knowledge) to facilitate and motivate learning by employees. Working in a learning-intensive organization presumably requires different kinds of skills and abilities than working in a more routinized environment. How do learning-intensive firms try to develop or recruit employees with the required skills and abilities? What is the role of secondary and postsecondary schools in preparing these employees? This two-year study, conducted last year and in 1990, has been collecting information on these questions from the firms that have deliberately undertaken to become more learning-intensive.

Several products concerning labor-intensive production strategies will be produced.

Project I.10

LINKING PLANNING AND EVALUATION IN VOCATIONAL AND TECHNICAL EDUCATION

Project Directors: Donald Elson, Deborah Strickland, and J. Dale Oliver
Virginia Tech (Year 3 of 3)

Keywords: Educational Assessment, Educational Planning, Coordination

Federal vocational legislation has placed increasing emphasis on assessment, evaluation, and planning since the 1976 Vocational Education Amendments. States have responded by developing a myriad of models, systems, and procedures for the generation, collection, and analysis of labor market, enrollment, programmatic, and follow-up data.

This study, in its third and final year, (1) describes the current status of vocational education planning-evaluation linkages; (2) reviews and synthesizes relevant research in such areas as planning, evaluation, evaluation utilization, administration, and innovation/ change identifying factors that influence effective linkages between planning and evaluation; (3) proposes research-based strategies or models for facilitating such linkages; and (4) develops and field-reviews a training program to prepare vocational evaluation and planning personnel to develop and implement coordinated planning/evaluation systems.

A final report as well as organizational/staff development materials will be produced by this project.

Project I.12

IMPROVING HEALTH SCIENCES EDUCATION: AN INDUSTRY STUDY

Project Director: Gary Hoachlander, University of California at Berkeley (Year 2 of 2)

Keywords: Health Occupations, Job Analysis, Educational Planning

The final year of this two-year study seeks to develop a methodology for identifying the changing skill requirements that are emerging in many occupations and for communicating those changes to vocational educators. While this study focuses initially on

the health care industry in Northern California, the research findings will have significance for this industry nationwide and for other industries. A unique methodology is employed. It adapts traditional, static job analysis techniques, concentrating on the dimensions and sources of occupational change, and their educational consequences. The study's researchers are working closely with a consortium of health care providers and vocational educators to achieve the following objectives:

- To develop a model industry study that can be used to examine the intersection between vocational education and employment in other industries.
- To produce a job analysis methodology that can be replicated and applied to occupations which are undergoing change and can be used for evaluating vocational education programs that provide training in these occupations.
- To design a system for information exchange between employers and educators that can be replicated for other industries and other geographical locations.
- To establish the National Center for Research in Vocational Education, University of California at Berkeley (NCRVE) as the leading center of expertise on vocational education and employment in the health industry.

Several substantive products concerning the health industry as well as methodological products on occupational analysis will be produced by this project.

II. CURRICULUM AND INSTRUCTIONAL METHODS

Project II.1
SUBJECT MATTER OF VOCATIONAL EDUCATION

Project Directors: Robert Beck and George Copa, University of Minnesota
(Year 3 of 3)

Keywords: Curriculum Research, Academic Education, Field Tests

Vocational education is in need of a conceptual framework for outlining its subject matter and relating it to other subject matter fields. One purpose of this project is to develop adequate principles that clearly describe the curricular content of vocational education. A second purpose of the project is to explore the relationship between vocational and "academic" education. Integration of vocational and "academic" education will be pursued on two fronts: (1) introducing and reinforcing academic education in vocational education and (2) introducing and reinforcing vocational education in academic

education. The focus of the third and final year of this project will be on field testing the conceptual framework, integration strategies, and curriculum developed on the basis of the conceptual framework.

This project will produce a final report.

Project II.2

MODELS FOR INTEGRATING ACADEMIC AND VOCATIONAL EDUCATION

Project Directors: W. Norton Grubb, University of California at Berkeley
Jane Plihal, University of Minnesota (Year 2 of 4)

Keywords: Curriculum, Academic Education, Educational Assessment

The second year of this four-year project will investigate different schools and colleges that are attempting to integrate academic and vocational education. At the secondary level, the project will concentrate on identifying and describing different models of integration, and also on analyzing how different approaches can be implemented. At the postsecondary level, the project will identify the concerns of community colleges and technical institutes, as well as identify some experiments with core curriculum, joint courses, and other novel approaches to coordination. While the project must be largely descriptive in this stage, it will begin to move toward evaluation of such efforts, in order to be able to specify over the long run not only what kinds of efforts exist to integrate academic and vocational education, but also which of them work best.

A report will be produced by this project.

Project II.4

IMPACT OF COGNITIVE SCIENCE–BASED INSTRUCTIONAL DESIGN ON WORK-RELATED, DOMAIN-SPECIFIED KNOWLEDGE ACQUISITION, STRUCTURE, USE, AND TRANSFER

Project Directors: Ruth Thomas and Betty Cooke, University of Minnesota
Scott Johnson, University of Illinois (Year 3 of 5)

Keywords: Instructional Design, Learning Processes, Problem Solving

The ability to acquire, use, and transfer knowledge is becoming increasingly important as technology advances. Future workers will need to continually expand their knowledge, update their skills, and adapt to the ever changing workplace. In response to

these needs, vocational education must ensure that its students are given the opportunity to "learn how to learn" and to develop the ability to think at higher levels.

This five-year program of research, now in its third year, is deriving and testing instructional principles from recent cognitive research. The project emphasis at the University of Illinois is to improve our understanding of the problem solving processes needed to diagnose and repair complex technical equipment.

Based on recent technical troubleshooting research, several relevant instructional principles have been identified and are being integrated into a computerized troubleshooting tutor. This computer tutor will provide students with the opportunity to gain troubleshooting experience with realistic problems in a "microworld" environment.

Project II.7

COMPUTERIZED ADAPTIVE ASSESSMENT OF BASIC SKILLS

Project Directors: David Pucel and David Weiss, University of Minnesota (Year 3 of 5)

Keywords: Basic Skills, Computer Assisted Testing, Job Analysis

This five-year project will develop a computer-administered test battery for assessing vocationally relevant skills in mathematics and reading. The test battery will be designed to test individuals entering vocational-technical schools in order to identify deficiencies in their basic skills that would reduce the effectiveness of vocational-technical education. The test battery will use state-of-the-art computerized adaptive testing procedures to insure both measurements of high precision and maximum efficiency of the testing process. Procedures will also be developed and implemented for identifying the minimum basic skill levels of occupations. These data will be combined with the individual skill measurements to provide a computer-generated individual interpretive profile of mathematics and reading skills for use by educational personnel.

In 1990, the project will produce a report as well as a software system for assessing mathematics skills.

Project II.8

RESEARCH ON THE EFFECTS OF TRAINING IN CONFLICT RESOLUTION AND COOPERATION

Project Director: Morton Deutsch, Teachers College, Columbia University (Year 3 of 4)

Keywords: Conflict Resolution, Interpersonal Communication, Instructional Materials

Many of the work problems experienced by students after they finish school relate to their lack of skill in working cooperatively with others and in managing their conflicts at work constructively. The research objectives of this four-year project now in its next-to-final year are as follows: (1) systematic assessment of the intervention (cooperative learning and conflict resolution) effects and their potential educational benefits; (2) the development of appropriate programs which will provide students with the opportunity to learn and practice skills in cooperation, collaboration, conflict management and conflict resolution; (3) the training of teachers and other appropriate school personnel in the mastery of cooperative learning and conflict resolution, and in the development of subject relevant curricula; and (4) the modification of intervention programs based on ongoing research results and collaboration with teachers. Qualitative and quantitative techniques are used in comparing equated groups of students who have or have not been exposed to training interventions, and to explore the effects of varying lengths of training exposure.

This project will produce public-domain products in 1991.

Project II.9

TECHNICAL AND SYMBOLIC KNOWLEDGE IN CNC MACHINING LABORATORY FOR COGNITIVE STUDIES OF WORK

Project Director: Sylvia Scribner, Teachers College, Columbia University (Year 3 of 4)

Keywords: Machine Tool Operators, Numerical Control, Cognitive Processes

This four-year project, now in its third year, addresses the question of how machinists learn to use computer numerical control (CNC) technology. This technology was selected because it represents a prototype of changes in work which require an integration of traditional machining knowledge with the symbolic knowledge and logical skills involved in the new "informatics" that are affecting not just machining but many industrial occupations. The project seeks to analyze the intellectual demands that these technologies pose, how workers learn to integrate their existing knowledge with the new

technologies pose, how workers learn to integrate their existing knowledge with the new symbol-based knowledge systems incorporated in these technologies, and which educational means are effective in facilitating this integration. In this next-to-final year, this project will (1) analyze the data of a previously conducted observational study of machinists learning CNC programming at work, and (2) continue a quasi-experimental study of cognitive differences among machinists and engineers with different kinds and levels of expertise in traditional machining and in CNC programming.

This project will produce public-domain products in 1990.

Project II.12

ANALYSIS AND IMPROVEMENT OF INSTRUCTIONAL MATERIALS

Project Directors: Thomas Anderson and Bonnie Armbruster, University of Illinois
(Year 2 of 3)

Keywords: Textbook Evaluation, Readability, Reading Strategies

During 1989, the first year of this three-year project, researchers undertook to survey and describe a variety of vocational-technical textbooks, focusing on the text that showed or demonstrated how to do something. Analyses determined how "reader considerate" the text was by investigating the characteristics of structure, cohesion, and audience appropriateness. Using results from this analysis, a topology of procedural texts and reading strategies was developed.

During 1990, the project will focus on modeling the strategies and processes that students use when reading and comprehending procedural text. Approximately fifty think-aloud protocols will be collected from students as they read, talk about, and perform the procedures described in the vocational-technical texts.

This project will produce public-domain products in 1991.

Project II.13

APPLIED BASICS CURRICULA IN VOCATIONAL EDUCATION: VALIDATION OF STUDENT AND PROGRAM OUTCOMES

Project Director: Jerry Pepple, University of Illinois (Year 2 of 4)

Keywords: Basic Skills, Program Evaluation, Educational Testing

The overall objective of this four-year project, now in its second year, is to assess the student and instructional program outcomes which result from implementation of applied basics curriculum packages such as Principles of Technology, Applied Communications, and Applied Mathematics. As these materials are developed and used in various ways by schools and individual teachers, it is important to understand the gains in basic skills which result across various student groups, different educational levels, and in different vocational program areas.

The pilot tests of the student assessment measures as well as the program information instruments, which were both begun last year, will be completed during the second year of this project. These instruments will be revised. The testing phase will be planned at experimental and control sites. On-site observation of the use of Principles of Technology, Applied Communications, and Applied Mathematics materials will be conducted.

This project will produce public-domain products in 1991.

Project II.14

COMPUTER ASSISTED INSTRUCTIONAL DESIGN FOR COMPUTER-BASED INSTRUCTION

Project Directors: Peter Pirolli, University of California at Berkeley
Daniel Russell, Xerox, Palo Alto, California (Year 1 of 1)

Keywords: Computer Assisted Instruction, Instructional Design, Artificial Intelligence, Academic Education

Recent advances in artificial intelligence (AI) and the cognitive sciences have made it possible to develop successful intelligent computer-aided instructional (ICAI) systems for technical and scientific training. Computer-aided design (CAD) environments that support the rapid development of such computer-based instruction have also been recently developed. This one-year investigation will study how a particular CAD system for instruction, called IDE (the Instructional Design Environment), can be tailored for ICAI

development in vocational education, determining how IDE can address the integration of the applied approach of vocational education with academic instruction, thereby providing more realistic applications for general academic subjects while at the same time providing motivation for the more general skills.

A final report and a prototype instruction will be the products of this project.

Project II.15

COMPUTER-BASED LEARNING ENVIRONMENTS IN VOCATIONAL EDUCATION SETTINGS: A PRELIMINARY ANALYSIS OF THE FIT OF NEW TOOLS WITH NONTRADITIONAL POPULATIONS AND DOMAINS

Project Director: Matthew Lewis, The RAND Corporation (Year 1 of 1)

Keywords: Computer Assisted Instruction, Instructional Material Evaluation, Instructional Design, Academic Education

The goal of this one-year project is to investigate how state-of-the-art, "intelligent" computer-based teaching tools might be affected by their use in vocational education settings. Data will be gathered on how the design of traditional intelligent tutoring systems (ITSs) may or may not be effective for current vocational education. The main data gathering activities are a review of the literatures, piloting an ITS specially tailored for two different vocational education domains, and interviews with vocational educators. In addition, guidelines/recommendations will be generated concerning the design routes to build effective computer-based teaching tools for vocational education, with the explicit goal of integrating academic and vocational education.

A final report will be produced by this project.

III. VOCATIONAL EDUCATION FOR SPECIAL POPULATIONS

Project III.1

VOCATIONAL EDUCATION IN THE CONTEXT OF PROGRAMS FOR PREGNANT AND PARENTING TEENAGERS

Project Director: Gail Zellman, The RAND Corporation (Year 3 of 3)

Keywords: Early Parenthood, Welfare Services, Policy Formation

Welfare reform is a new policy initiative likely to have major impacts on programs for teenage mothers, on teenage mothers themselves, and on the demand for vocational education and job skills training. In this final year of a three-year study, welfare reform programs in selected states will be examined and implications explored for teenage mothers and for the local programs that attempt to provide these mothers with education and job skills training. Legislation, regulations, and state plans will be reviewed, a review of relevant literature will be conducted, and telephone surveys in selected states will be performed. These tasks may be supplemented by visits in up to three states. Project findings will focus on likely effects of welfare reform on the demand for and delivery of vocational education.

A final report of study findings for the three-year project will be produced. This report will be condensed into a second product targeted to policymakers.

Project III.2

PREPARING A LITERATE WORKFORCE

Project Directors: Jenny Cook-Gumperz and Glynda Ann Hull, University of California at Berkeley (Year 2 of 2)

Keywords: Literacy, Ethnic Groups, Instructional Design

This project investigates the role that literacy skills play in vocational programs and the workplace. The focus is especially on at-risk populations—non-college-educated young adults and other reentry and minority adults. The central question asked is, "What kinds of literacy curricula are best suited for such learners?" The contexts for the work on literacy are two different community college career paths and related job settings: (1) a short-term banking and finance program leading to an in-house certificate and immediate job placement, and (2) a longer-term, more academically rigorous licensing program for

vocational nursing. Year 1 of the project (1989) centered primarily on ethnographic research in the banking and nursing programs. This year, the instructional contexts provided in the community college will be studied with a view to how they might be shifted to make literacy learning more accessible to reentry adults, perhaps through the use of recently developed information technologies (e.g., hypertext) to redesign course materials. Throughout the project, practitioners are involved through project-established local and national networks.

Three reports will be produced by this project. These materials will concern conceptual and ethnographic perspectives on a literate workforce.

Project III.3

ASSESSING AND IMPROVING THE EFFECTS OF PRACTICES FOR SERVING LEP AND IMMIGRANT STUDENTS IN VOCATIONAL EDUCATION

Project Director: Elizabeth Platt, University of Illinois (Year 2 of 2)

Keywords: Limited English Speaking, Collaboration, Ethnographic

Individuals with limited English proficiency (LEP) represent the fastest growing group of special population students to be served in vocational education programs. Although program descriptions and various models are available, few studies have examined the components of these programs in depth, nor have the studies attempted to link specific practices with student outcomes. This study is an investigation of the collaborative aspects of successful vocational programs serving LEP students.

Using ethnographic interviews with program participants, the research team will determine how selected programs were developed, how authority and responsibility is viewed, and how information is exchanged. They will also conduct student interviews, observe classroom interaction, and use video techniques to learn how the collaborative efforts of faculty members indirectly impact student outcomes. In 1990, the team will visit three high school and three community or technical college sites serving LEP students in vocational programs. Following a national search, these sites were selected because of the collaborative efforts of their teaching faculty on behalf of vocational LEP students.

The study will produce a rich source of data which will highlight the self-perceived roles of teachers and their beliefs about what knowledge is important to share. The

products of the research will be a handbook which details the project findings and a video showing effective collaborative practices observed during the site visits. A conference reporting the findings will also be held near the end of the project.

Project III.5

STUDY ON SKILLS ACQUISITION BY ECONOMICALLY DISADVANTAGED YOUTH

Project Directors: Margaret Simms and Joyce Allen, Joint Center for Political Studies, Inc. (Year 1 of 1)

Keywords: Black Youth, Economically Disadvantaged, Program Evaluation, Basic Skills

This one-year study will focus on skills acquisition by one of the most disadvantaged groups in the labor force—black youth. The research goals are to determine the various types of school-based programs that have been established to help prepare students to enter the workforce in selected major cities, to determine how these programs operate and the role that businesses play in developing and supporting the programs, and to analyze program outcomes and work experiences of program participants. The study's outcomes will have implications for how vocational education programs can provide disadvantaged and minority youth with fundamental academic skills as well as job-related skills.

A final report with recommendations will be produced by this project.

IV. THE DEVELOPMENT OF PERSONNEL IN VOCATIONAL EDUCATION

Project IV.1(b)

THE NATURE OF RESEARCH-SENSITIVE PRACTICE IN VOCATIONAL EDUCATION

(Formerly Titled: Strengthening the Knowledge Base for Vocational Education Personnel Development)

Project Director: L. Allen Phelps, University of Illinois (Year 2 of 2)

Keywords: Research Utilization, Personnel Development, Case Studies

As vocational-technical education programs continue to undergo rapid change as a result of changes in the workplace and the education profession, it is imperative that vocational teachers be better consumers of research, as well as be capable of conducting research and inquiry activities within their own programs. One of the major premises undergirding the NCRVE program of work is that the research will improve the capacity of vocational education professionals to review, evaluate, conduct research upon, and/or upgrade their instruction and programs. Through a comprehensive questionnaire and a series of in-depth case studies, this second year of a two-year project focuses on describing the extent and nature of research-sensitive practice (RSP) found in vocational education programs at the secondary and postsecondary level. Among the major components of RSP being examined are professional preparation, organizational demographics and influences, continuing professional education, and personal dispositions toward research and practice.

Two technical reports will be prepared which will describe, respectively, the state-of-the-art relative to RSP in vocational education and strategies for developing and nurturing RSP.

Project IV.1(c)

THE NATURE OF EFFECTIVE VOCATIONAL EDUCATORS IN BUSINESS AND INDUSTRY

Project Director: James A. Leach, University of Illinois (Year 2 of 2)

Keywords: Vocational Education Teachers, Teacher Education, Needs Assessments

Vocational teacher education programs have traditionally prepared teachers for work in secondary schools in specific service areas such as agricultural or business education. However, the rapid growth in postsecondary vocational-technical education and in training and human resource development programs in the private sector has created far more vocational teaching positions than have been available at the secondary level. Vocational training in business and industry has become increasingly prominent. It is arguably the largest provider of adult education in the United States.

The roles of vocational teachers in business and industry are distinctly different from the roles of secondary vocational educators. The nature of the knowledge and experiences provided through vocational teacher education programs must be consistent with these new roles.

During 1989, the nature of effective vocational educators who are employed in business and industry was examined. The second, and final, year of this project will examine vocational teacher education programs. Using the information gleaned from Year 1 activities, the extent to which vocational teacher education programs include appropriate knowledge and skill training to successfully prepare vocational educators for training positions in business and industry will be determined.

A report evaluating the success of vocational education in educating private sector trainers, and profiling such trainers, will be produced by the project.

Project IV.2

PROFESSIONAL DEVELOPMENT OF BEGINNING VOCATIONAL TEACHERS

Project Directors: William Camp and Betty Heath, Virginia Tech (Year 3 of 5)

Keywords: Vocational Education Teachers, Beginning Teachers Demonstration Programs

The third year of this five-year project consists of two parallel and concurrent phases. The induction research (Phase I) will focus on beginning vocational teachers in three groups: (1) secondary-level teacher education graduates, (2) secondary-level teachers with alternative certification (i.e., college graduates without teacher education), and (3) secondary-level teachers whose certification is based on industry or business experience (i.e., vocational certification, as in the traditional Trades and Industry [T&I] model). This part of the study will consist of a continuing ethnographic examination of a sample of beginning vocational teachers who have been studied since 1988; the weekly survey follow-up of a sample of beginning vocational teachers whose initial involvement began in September 1989; and a one-time survey of a national sample of beginning vocational teachers.

The model research (Phase II) for 1990 will involve the examination and evaluation for potential exportability of exemplary programs in various parts of the United States, designed to provide induction assistance and guidance for beginning teachers.

This project will produce a report.

Project IV.5

IDENTIFYING PROFESSIONAL DEVELOPMENT PROGRAMS FOR TWO-YEAR COLLEGE OCCUPATIONAL-TECHNICAL FACULTY

Project Directors: James Hoerner, Darrel Clowes, and Marilyn Lichtman
Virginia Tech (Year 2 of 2)

Keywords: Inservice Teacher Education, Demonstration Programs, Case Studies

This two-year project seeks to identify professional development programs for occupational-technical faculty in community, technical, and junior colleges in the United States.

During the first year of the project, an extensive literature review and two surveys were conducted. From the national survey of 1,252 community colleges, exemplary professional development programs for occupational-technical faculty were identified. The second survey focused on a sample of full and part-time occupational-technical faculty at forty-six of the community colleges identified in the first survey.

During this final year, emphasis will be placed on identifying exemplary professional development programs and activities, conducting case studies of selected exemplary programs, and testing the hypotheses generated in 1989.

This project will produce a final report.

Project IV.6

THE PROFESSIONAL COMMUNITY OF TEACHERS AND RELATIONS BETWEEN VOCATIONAL AND ACADEMIC FACULTY

Project Director: B. June Schmidt, Virginia Tech (Year 1 of 1)

Keywords: Vocational Education Teachers, Academic Education, Cooperative Programs

As the work of the nation becomes more and more technical, even jobs that have typically been filled by individuals with limited skills and education now require workers with basic academic competence. Helping students develop this competence has surfaced as a major concern for educators, one that requires a collaborative commitment of both vocational and academic faculty. The Southern Regional Education Board–State Vocational Education Consortium, now in the second year of a six-year effort, is working to advance, apply, and evaluate approaches that will strengthen the basic academic competence of students enrolled in vocational programs. The consortium includes fourteen southern states with thirty-three pilot-site schools where teachers are using a variety of instructional intervention strategies, both in vocational and academic classrooms, to improve students' basic academic competence. This one-year research effort will build on information already collected by the consortium and will focus on identifying new methods, including team teaching and group development, that have been implemented collaboratively between vocational and academic teachers at the sites. Specific research questions that will be answered include (1) What instructional intervention strategies have been developed and used? (2) How effective have the strategies been? (3) What administrative practices foster

collaborative relationships between vocational and academic teachers? (4) What types of inservice activities foster these collaborative relationships? and (5) What changes in the school instructional environment are needed to foster these collaborative relationships?

This project will produce a monograph on developing collaborative relationships between academic and vocational teachers.

Project IV.7

HIGHER EDUCATION COURSEWORK AS PREPARATION FOR TEACHING ACADEMIC SKILLS IN VOCATIONAL EDUCATION CLASSES

Project Directors: Curtis Finch, B. June Schmidt, and J. Dale Oliver, Virginia Tech
(Year 1 of 1)

Keywords: Teacher Education, Course Selection (Students), Academic Education

As greater numbers of vocational teachers are asked to integrate academic skills into their vocational education subject areas, consideration must be given to the preparation these teachers need as they assume this new teaching role. This one-year research study focuses on the coursework vocational education teachers complete during their teacher preparation studies. A sample of vocational education teacher preparation programs will provide transcripts of 1988–89 graduates. These transcripts will be analyzed and comparisons will be made among teaching majors in terms of amount of coursework taken. The results generated from this study will provide higher education personnel and state-level policymakers with an accurate picture of how well vocational education teachers are prepared to teach academic skills in their classrooms and laboratories.

A final report with recommendations will be produced by this project.

Project IV.8

SCHOOL CONTEXT AND TEACHERS' PROFESSIONAL DEVELOPMENT IN VOCATIONAL EDUCATION

Project Director: Judith Warren Little, University of California at Berkeley
(Year 1 of 2)

Keywords: Vocational Education Teachers, Teaching Conditions, Professional Development

Teachers' performance and commitment rest on their professional preparation, the context and condition of the work environment, and on the opportunities available for professional development. This eighteen-month project (to be completed mid-1991) will investigate how vocational and academic teachers' motivation and opportunities for professional development are shaped by their work context as well as external opportunities. A combination of interviews, observation, and archival data will be employed.

The project will produce a report.

V. THE DELIVERY SYSTEM OF VOCATIONAL EDUCATION AND TRAINING

Project V.10

LEARNING FROM SCHOOL-BASED WORK EXPERIENCE PROGRAMS

Project Directors: David Stern, University of California at Berkeley
Charles Hopkins and James Stone, University of Minnesota
Martin McMillion, Virginia Tech (Year 3 of 5)

Keywords: Cooperative Education, Outcomes of Education, Longitudinal Studies

This will be the third year of a planned five-year longitudinal study. Secondary and postsecondary (two-year college) students in school-supervised work experience (cooperative education) programs, and comparable students in the same schools who hold nonsupervised jobs or who are not employed, will be followed for one to three years after leaving school or college. Detailed data on quality and quantity of employment while in school will be correlated with students' subsequent performance in the labor market and in further schooling. Results will be directly useful to teachers, administrators, and policymakers involved with co-op or other work experience programs. Findings may also

be suggestive for employer-sponsored training and organizational design efforts intended to integrate learning with production.

Six products will be produced by this project. These papers will cover such areas as the effects of work experience, the quality of jobs held by students, and perceptions of student-held jobs by various actors.

Project V.11

MAGNET VOCATIONAL SCHOOLS: ARE THEY SUCCESSFUL, AND FOR WHOM?

Project Director: Robert Crain, Teachers College, Columbia University (Year 3 of 3)

Keywords: Magnet Schools, Outcomes of Education, Program Effectiveness

This final year of a three-year study of magnet career-oriented programs either in self-contained buildings or inside regular comprehensive schools will focus on educational outcomes: test scores, grades, course credits earned, absenteeism, dropouts, and transfers to other schools. The study takes its theoretical approach from adolescent sociology and psychology. The schools studied serve a disadvantaged population. The evaluation employs a genuine randomized experimental design with some 20,000 subjects. The results of the experiment will be supported by three ancillary studies:

1. An analysis of psychological and sociological outcomes in the High School and Beyond data set.
2. Intensive interviews with seventy students, using an experimental design to compare students in magnet programs to other students who were *not* randomly admitted to magnet vocational schools.
3. Interviews with administrators and teachers to learn how the magnet vocational programs were designed and implemented.

A final report will be produced by the project.

Project V.12

INSTITUTIONAL EXCELLENCE IN VOCATIONAL EDUCATION: RECOGNIZING AND ASSESSING ITS NATURE AND OPERATION

Project Directors: George Wardlow and Gordon Swanson, University of Minnesota (Year 2 of 2)

Keywords: School Effectiveness, Educational Quality, Institutional Evaluation

The purpose of this study is to provide a better understanding of the nature and the operation of the institutions in which exemplary vocational education programs exist. In its second and final year, this project will study ten to twenty sites to identify institutional factors associated with program excellence, and an instrument/process to assess institutional excellence will be developed and validated.

A final report will be produced by this project.

Project V.13

THE EFFECTS OF CUSTOMIZED TRAINING AND LOCAL ECONOMIC DEVELOPMENT: COMMUNITY COLLEGES

Project Directors: Debra Bragg, University of Illinois
James Jacobs, Industrial Technology Institute (Year 1 of 1)

Keywords: Program Evaluation, School Business Relationship, Community Colleges

In this one-year project, the Industrial Technology Institute and the University of Illinois propose to (1) develop a conceptual framework for customized training through a collaborative endeavor with a community-college consortium, the Mid-America Training Group; and (2) develop an operational definition of customized training to provide a basis for future evaluations of community college customized training programs.

The monograph produced from this project will build upon the knowledge base provided in the Center's earlier paper on vocational education and economic development (*Separating the Wheat from the Chaff: The Role of Vocational Education in Economic Development*, NCRVE Product # 040).

Project V.14

THE EFFECTS OF CUSTOMIZED TRAINING AND LOCAL ECONOMIC DEVELOPMENT ON FIRMS, EDUCATION PROVIDERS, AND GOVERNMENT

Project Director: Robert Bailey, Teachers College, Columbia University (Year 1 of 1)

Keywords: Cooperative Programs, School Business Relationship, Economic Development

This one-year project will identify and assess the success and problems of customized training and education programs as they fit into state and local economic development strategies; a case study approach will be applied to five or more individual programs. The core of the study will be a preliminary assessment of how such customized training affects firms, training institutes, trainees, and the catalysts (e.g., government, chambers of commerce, public/private partnership groups) that might have organized the programs.

The final product will identify common themes of success and examine in more detail cases of failure. The final deliverable will be placed in the context of human resource development and economic development policy.

Project V.15

MIXING ACADEMIC WITH VOCATIONAL: DO THE MAGNETS DO IT BETTER?

Project Director: Molly Selvin, The RAND Corporation (Year 1 of 1)

Keywords: Magnet Schools, Comprehensive Programs, Comparative Analysis, Academic Education

This one-year project will study the integration or fusing of vocational training with academic curriculum as a promising path for reform of the high school vocational curriculum. This integration reportedly occurs in several magnet high schools. Using a combination of interview and observational data, a study will be done of the extent to which and the process by which academic and vocational skills are integrated or fused in two magnet high schools and the results of this research at magnet high schools will be compared with the findings from Center research on the vocational curriculum in comprehensive high schools (i.e., a 1988-89 project, *Who Gets What and Why? Curriculum Decisionmaking in Vocational Education*). This comparative case study approach should yield insights or "lessons" applicable to comprehensive high schools and

to magnets with respect to the most promising methods to integrate vocational and academic skills.

A final report will be produced by the project.

VI. GOVERNANCE AND POLICY

Project VI.11

A LONGITUDINAL ASSESSMENT OF VOCATIONAL EDUCATION ENROLLMENT PATTERNS AND THE IMPACT OF EDUCATIONAL REFORM

Project Directors: Deborah Strickland, Donald Elson, and Nevin Frantz, Virginia Tech (Year 2 of 3)

Keywords: Secondary School Curriculum, Enrollment Trends, Educational Change

Public demand for education reform has resulted in the implementation of new or revised education policies which appear to have implications for secondary students' participation in vocational education programs. At the same time, the role of vocational education in the secondary school has come under increased scrutiny, and questions concerning the delivery and structure of programs have been raised. This three-year program of longitudinal research examines vocational education enrollment patterns nationwide in light of implementation of education reform–related policies. Extant baseline quantitative data have been used to establish enrollment trends prior to the onset of reform policies, with continued data collection to be conducted throughout the duration of the program. During this second year, qualitative data on policy implementation and secondary vocational strategies for addressing education reform policies will be analyzed in the context of these enrollment trends. Task force study groups will be formed to discuss these state-specific enrollment/policy scenarios. The ability to discern if, when, or in what context education reform policies affect vocational enrollments and what intervention strategies have been effective will provide decision makers with substantive information for planning and implementing relevant and dynamic vocational education programs.

Several vocational education enrollment and policy trend papers will be produced, grouped by year-clusters.

Project VI.12

POLICY FOR INTEGRATED ACADEMIC AND VOCATIONAL EDUCATION

Project Directors: Arthur Wise and Susan Bodilly, The RAND Corporation (Year 1 of 2)

Keywords: Integrated Curriculum, Policy Formation, Secondary Education, Academic Education

This two-year project will explore the leading attempts to integrate vocational and academic curriculum at the high school level in an effort to develop national, state, and local policy guidelines which will encourage and accommodate the best of these new approaches. Special attention will be given to ensuring that policy and administration support the best practice. The policy intent and conceptual bases of selected programs will be determined. The project will focus on those programs that come closest to the assertions of cognitive science concerning better learning practices and on those programs serving disadvantaged students. Second, the means by which these practices are encouraged and implemented at the levels of policy, administration, and classroom practice will be investigated. (The best practices and different approaches will be documented.) Third, policy changes required to encourage these programs to grow from isolated experimental programs to systemwide innovations will be documented. The first year of this project will conduct four to six case studies of programs; year two will concentrate on interviews with policymakers.

This project will produce public-domain products in 1991.

Project VI.13

ACCOUNTABILITY IN VOCATIONAL EDUCATION

Project Director: Paul Hill, The RAND Corporation (Year 1 of 2)

Keywords: Evaluation Criteria, Evaluation Methods, Accountability

The goal of this two-year project is to identify performance and accountability mechanisms that might be used to improve vocational education. Project goals are two: (1) to identify those aspects of vocational education that might be strengthened by better performance indicators, and (2) to formulate requirements for the needed indicators and assessment processes. A major focus of the project will be an effort to identify criteria for determining whether, for particular functions of vocational education, it is possible to build

formal indicator systems that reliably improve upon the (usually) informal and unsystematic performance assessment methods that already exist.

This project will identify functions that vocational education should serve, analyze the degree to which interested parties can assess how well those functions are being performed, identify those functions that are now most poorly assessed, and suggest methods of developing improved indicators and better reporting to interested parties.

Much of the work of the project will be conceptual, informed by extensive consultation with consumers and vocational education practitioners—students and the leaders of enterprises that hire them—as well as with state, federal, and school district officials. But the technical quality of existing and prospective measurement schemes and reporting networks also will be considered.

This project will produce public-domain products in 1991.

Project VI.14

EFFICIENCY AND EQUITY EFFECTS OF VOCATIONALLY FOCUSED POSTSECONDARY EDUCATION AND TRAINING

Project Directors: James Hearn and Darrell Lewis, University of Minnesota
(Year 1 of 1)

Keywords: Postsecondary Education, Outcomes of Education, Socioeconomic Status

Two rationales have been used to support governmental funding of postsecondary vocational education and training: an efficiency rationale and an equity rationale. Research investigating the effects of this public investment, and thus the defensibility of these rationales, has often been hampered by inadequate data and other limitations. In this one-year study, the nationally representative High School and Beyond data set will be used for a systematic investigation of the distinctive role played by vocational education in affecting the socioeconomic mobility and income attainment of high school graduates of the class of 1980.

A final report will be produced by this project.

PART TWO:

THE SERVICE FUNCTIONS OF THE NATIONAL CENTER

In addition to research and development, the Center must perform various service functions for vocational educators and policymakers. The Carl D. Perkins Vocational Education Act specifies the activities which the Center must undertake:

- Provide leadership development;
- Provide inservice education for state and local leaders in vocational education;
- Disseminate the results of the research and development projects funded by the Center;
- Provide information to facilitate national planning and policy;
- Provide technical assistance to programs serving special populations;
- Act as a clearinghouse on research, curriculum development, and personnel development;
- Work with various public agencies in developing methods of planning and evaluating programs; and
- Report to Congress, the Secretary of Education, and the Secretary of Labor on joint planning and coordination under the Perkins Act and the Job Training Partnership Act.

We broadly interpret these various activities as different forms of dissemination—that is, different ways of making the research and development of the Center useful to teachers, administrators, policymakers, and other researchers.

Several principles will guide the Center's service efforts. First, to the extent possible, service functions will be integrated with research programs and performed as part of the six issue areas described in Part One.

Second, the various services in general, and dissemination in particular, will be designed to integrate researchers and practitioners, rather than to keep them separate in different worlds.

Third, as a general proposition, the Center will attempt to build up the institutional infrastructure of vocational education through leadership development and inservice education.

The remainder of this part of the proposal describes in greater detail how the Center plans to carry out each of its service functions.

Service Activity 1

CENTER-WIDE 50-STATE SURVEY

Project Directors: Gail Zellman and Lorraine McDonnell, The RAND Corporation (Year 3 of 3)

Keywords: Educational Practices, Educational Policy, National Surveys

This three-year activity, now in its final year, will inform both the Center's research and service functions. In Year 1 the survey was organized and conceptualized by RAND Corporation staff in collaboration with Center researchers and service area directors; in Years 2 and 3 (1989 and 1990), the survey is being designed and fielded by RAND Corporation researchers. The survey is designed to provide a broad overview of state institutions, the policies they produce, and the major ways in which they vary. It cannot, however, assess how well these institutions are actually working or whether policymakers' expectations have been met in practice. The survey will yield sufficient information about different institutional roles and state approaches to curriculum, teacher policy, and job training to provide vocational education professionals and researchers wishing to explore these topics in greater depth with an informed starting point.

This activity will produce public-domain products in 1991.

Service Activity 4

ADVANCED STUDY CENTER FOR LEADERSHIP DEVELOPMENT

Project Director: Jerome Moss, University of Minnesota (Year 3 of 5)

Keywords: Leadership, Teacher Educator Education, Graduate Students

A major goal of the Advanced Study Center for Leadership Development (ASCLD) in its third year of this five-year service activity, is to stimulate new and improved leadership development activities in institutions of higher education for graduate students,

especially doctoral students, in vocational education. To accomplish this goal, the ASCLD will (1) continue the development of an assessment instrument(s) to measure leadership attributes; (2) plan and conduct a conference on leadership development for vocational teacher educators; (3) through an RFP processes, provide partial support for leadership development activities at selected institutions; and (4) begin to evaluate the leadership development activities stimulated and facilitated by (2) and (3) above.

Two products concerned with the development and assessment of leadership attributes will be produced by this activity.

Service Activity 5

LEADERSHIP DEVELOPMENT IN VOCATIONAL EDUCATION: PREPARING VOCATIONAL EDUCATION ADMINISTRATORS

Project Director: Curtis Finch, Virginia Tech (Year 3 of 3)

Keywords: Leadership, Educational Administration, Administrator Education

This project, which is closely linked with NCRVE leadership development activities at the University of Minnesota (see Service Activity 4, *supra*), seeks to identify leadership capabilities associated with vocational education administration and, based on this research, propose instructional sequences that prepare persons to function as successful administrators. During the project's first phase of this three-year service activity, leadership capabilities were identified through interviews with practicing administrators. Activities during this third and final year will focus on identifying and assessing existing administrator development formats and materials and will propose new instructional approaches and sequences for use in the NCRVE leadership development component. Information made available to individual states, state departments of education, postsecondary institutions, local education agencies, and universities should provide them with a greater capacity to prepare and upgrade vocational education administrators in a manner that goes beyond the knowledge and application of specific tasks.

A final report concerned with preparing and upgrading vocational education administrators will be produced by this activity.

Service Activity 6

INSERVICE EDUCATION

Project Directors: Lois A. Beeken and B. June Schmidt, Virginia Tech (Year 3 of 5)

Keywords: Inservice Education, Professional Development, Evaluation, Delivery Systems

The Inservice Education Project (ISEP) will conduct a comprehensive program of inservice education activities in collaboration with individuals and organizations whose goal is to strengthen the content and delivery of instruction in vocational education. The following activities are planned during the third year of this five-year service activity: (1) providing ongoing technical assistance to Center projects in planning, delivering, and evaluating inservice education activities; (2) collaborating with the Southern Regional Education Board–Vocational Education Consortium in a project to strengthen basic competencies of vocational education students; (3) conducting a national workshop on the development of secondary/postsecondary "Tech Prep" programs; (4) conducting a professional development seminar for the National Employment and Training Association; (5) collaborating with the Vocational-Technical Education Consortium of States (V-TECS) to conduct a national conference on vocational education competency testing; and (6) sponsoring a seminar on leadership development at the American Vocational Association conference.

Products will be prepared concerning activities (2) and (3) above as well as a product summarizing the use of audioconferencing as a delivery strategy.

Service Activity 7

TECHNICAL ASSISTANCE FOR SPECIAL POPULATIONS PROGRAM

Project Director: Carolyn Maddy-Bernstein, University of Illinois (Year 3 of 5)

Keywords: Individual Needs, Special Programs, High Risk Students

Guided by a national task force, the Technical Assistance for Special Populations Program (TASPP) is designed to assist in the improvement of vocational education programs for special needs youth and adults. TASPP provides comprehensive resource and referral services to practitioners, researchers, and policymakers working in vocational education with special needs populations at the secondary and postsecondary level; initiates and supports networks of professionals serving the vocational education needs of special groups; and provides targeted technical assistance on selected topics or problems crucial to

improving the quality of vocational education programs provided to special populations. In Year Three of this five-year activity, TASPP will focus on the unique needs of special learners in rural and urban settings and from their findings will provide services and materials to professionals who serve those populations. Also, a national recognition program for *exemplary* vocational education programs serving special needs students will be launched.

TASPP will produce a newsletter, several topical briefing papers, and resource guides concerning the vocational education of urban and rural special needs populations.

Service Activity 8
DISSEMINATION

Project Director: Peter Seidman, University of California at Berkeley (Year 3 of 5)

Keywords: Information Dissemination, Referral, Publications

The mission of the Center's dissemination service function is to integrate knowledge producers and knowledge users into a shared effort at renewing vocational education through the production and use of useful knowledge developed and disseminated in a usable manner. The third year of this five-year activity will concentrate on building a collegial network across the Center's sites; an electronic communications network accessible to all the major clientele of the Center; an information brokering service; and the development and dissemination of the Center's research and service outcomes in forms useful for and useable by those clients who could most benefit from such information.

A newsletter, product catalogs, informational brochures, and customized informational responses will be produced by this activity.

Service Activity 9

TECHNICAL ASSISTANCE FOR PLANNING AND EVALUATION

Project Director: Gary Hoachlander, University of California at Berkeley (Year 3 of 5)

Keywords: Educational Planning, Policy Formation, Technical Assistance

This five-year service function will include six major activities in its third year. First, the Center will continue a major effort to help shape the collection of national data on vocational education. Through a series of meetings in Washington, DC, with federal agencies involved in data collection, interest groups, and researchers, the Center will seek to develop a comprehensive plan for collecting national data on vocational education.

Second, the Center will begin the publication of a series of vocational education statistical abstracts, tentatively titled "Vocational Data Abstracts," pulling together what is known from national data on student participation in secondary and postsecondary vocational education, staffing, expenditures, and other topics.

Third, the Center will continue to update and maintain its mainframe computer data files, provide technical support, and continue publication of bulletins on the Data Library.

Fourth, the Center will cosponsor a series of seminars with the Institute for Educational Leadership to provide a forum for the dissemination and discussion of research and analysis that can assist in policy planning in vocational education. These seminars are a fully integrated component of the Center's Advanced Study Center service function.

Fifth, the Center, working closely with the Illinois State Department of Adult, Vocational and Technical Education, will develop a collaborative model to assist other states by providing technical assistance in building institutional capacity in planning and in the implementation of the Illinois five-year plan.

Finally, this service activity will have primary responsibility for responding to requests for technical assistance. Technical assistance will mainly take two forms. First, the Center will respond to requests for information and analysis that can be addressed using the Center's Data Library or other sources of information maintained by the Center. Second, technical assistance will also take the form of consultation to states or groups of states on major planning or evaluation efforts of the kinds the Center is currently

conducting for the Southern Technology Council's thirteen-state consortium of community colleges.

A methodological bulletin on using data, thematic abstracts, and a paper summarizing meetings on national data needs will be produced by this activity.

Service Activity 10

RELATIONSHIPS BETWEEN VOCATIONAL EDUCATION AND THE JOB TRAINING PARTNERSHIP ACT

Principal Directors: W. Norton Grubb, University of California at Berkeley;
Gary Hoachlander, MPR Associates (Year 3 of 5)

Keywords: Job Training, Cooperative Programs, Case Studies

The Carl D. Perkins Vocational Education Act requires that the Center report to Congress, the Secretary of Education, and the Secretary of Labor on relationships between vocational education and Job Training Partnership Act (JTPA) programs. In 1990, the project will focus on the relationship between remedial or basic education and vocational skills training in vocational education, JTPA, and welfare-to-work programs. The research will identify what remediation various education and training programs offer, as well as some exemplary programs. The project will also attempt to determine the effectiveness of different approaches to basic or remedial education.

This activity will produce a report for Congress and the Secretaries of Education and Labor concerning the current relationship between vocational education and the JTPA.

INDEX

Academic Education 7, 8, 12, 13, 20, 21, 25, 27
Accountability 27
Administrator Education 32
Artificial Intelligence 12

Basic Skills 9, 12, 16
Beginning Teachers 19
Black Youth 16

Case Studies 17, 19, 36
Cognitive Processes 10
Collaboration 15
Community Colleges 24
Comparative Analysis 25
Comprehensive Programs 25
Computer Assisted Instruction 12, 13
Computer Assisted Testing 9
Conflict Resolution 10
Cooperative Education 22
Cooperative Programs 20, 25, 36
Coordination 6
Course Selection (Students) 21
Curriculum 8
Curriculum Research 7

Data Analysis 4
Delivery Systems 33
Demonstration Programs 19

Early Parenthood 14
Economic Climate 4
Economic Development 24, 25
Economically Disadvantaged 16
Educational Administration 32
Educational Assessment 6, 8
Educational Change 26
Educational Needs 5
Educational Planning 6, 35
Educational Policy 31
Educational Practices 31
Educational Quality 24
Educational Testing 12
Educational Trends 4
Enrollment Trends 26
Ethnic Groups 14
Ethnographic 15
Evaluation 33
Evaluation Criteria 27
Evaluation Methods 27

Field Tests 7

Graduate Students 31

Health Occupations 6
High Risk Students 33

Individual Needs 33
Industrial Technology Institute 24
Industrial Training 5
Information Dissemination 34
Inservice Education 33
Inservice Teacher Education 19
Institutional Evaluation 24
Instructional Design 8, 12, 13, 14
Instructional Material Evaluation 13
Instructional Materials 10
Integrated Curriculum 27
Interpersonal Communication 10

Job Analysis 6, 9
Job Training 36
Joint Center for Political Studies 16

Leadership 31, 32
Learning Processes 8
Limited English Speaking 15
Literacy 14
Longitudinal Studies 22

Machine Tool Operators 10
Magnet Schools 23, 25
MPR Associates 36

National Surveys 31
Needs Assessments 18
Numerical Control 10

Outcomes of Education 22, 23, 28

Personnel Development 17
Personnel Needs 5
Policy Formation 14, 27, 35
Postsecondary Education 28
Problem Solving 8
Professional Development 22, 33
Program Effectiveness 23
Program Evaluation 12, 16, 24
Publications 34

Readability 11
Reading Strategies 11
Referral 34
Research Utilization 17

School Business Relationship 24
School Effectiveness 24
Secondary Education 27
Secondary School Curriculum 26
Sites
  University of California at Berkeley 5, 6, 8, 12, 14, 22, 34, 35, 36
  Subcontracts
    Teachers College 4, 10, 23, 25
    The RAND Corporation 13, 14, 25, 27, 31
    University of Illinois 8, 11, 15, 17, 18, 24, 33
    University of Minnesota 7, 8, 9, 22, 24, 28, 31
    Virginia Tech 6, 19, 20, 21, 22, 26, 32, 33
Socioeconomic Status 28
Special Programs 33

Teacher Education 18, 21
Teacher Educator Education 31
Teaching Conditions 22
Technical Assistance 35
Textbook Evaluation 11

Vocational Education Teachers 18, 19, 20, 22

Welfare Services 14

Xerox 12

National Center for Research in Vocational Education
University of California at Berkeley
1995 University Avenue, Suite 375
Berkeley, CA 94704
(415) 642-4004
FAX (415) 642-2124

Director
Charles S. Benson

Deputy Director
Gerald Hayward

Associate Director
Gordon I. Swanson

Director of Dissemination
Peter Seidman

Director of Washington Liaison Office
Mary Cross
(202) 462-0221

University of California Site Director
W. Norton Grubb

Business Officer
Paulette Powell

Director, National Planning & Evaluation
Gary Hoachlander

NCRVE Subcontractors

Columbia University
Sue Berryman, Site Director, NCRVE
Institute on Education and the Economy
Teachers College, Columbia University
Box 174, 525 W. 120 Street
New York, NY 10027
(212) 678-3091

RAND Corporation
Jeannie Oakes, Site Director, NCRVE
The RAND Corporation
1700 Main Street
Santa Monica, CA 90406-2138
(213) 393-0411

University of Illinois
L. Allen Phelps, Site Director, NCRVE
College of Education
Department of Vocational and Technical Education
1310 S. Sixth Street
University of Illinois
Champaign, IL 61874
(217) 333-0807

University of Minnesota
Jerome Moss, Site Director, NCRVE
425 Vocational and Technical Education Building
1954 Buford
University of Minnesota
St. Paul, MN 55108
(612) 624-0718

Virginia Tech
Curtis Finch, Site Director, NCRVE
Department of Vocational and Technical Education
115 Lane Hall
Virginia Tech
Blacksburg, VA 24061
(703) 231-5982